

Fall Applications of Aminocyclopyrachlor (KJM44) for Biennial Weed Control

Introduction

Musk thistle, common teasel, and poison hemlock are all biennial herbaceous weeds that are commonly found on Kentucky roadsides. Musk thistle is on the noxious weed list in Kentucky. These biennial weeds are typically found in pastures, hayfields, roadsides, and other low maintenance areas. Research at the University of Kentucky has shown that the most effective timing application to control biennial species is either in the spring or fall when these plants are in the rosette stage of their life cycle.

Aminocyclopyrachlor (KJM44) is a pyrimidine carboxylic acid herbicide with synthetic auxin mode of action in development for the noncrop and invasive plant market by DuPont. KJM44 is a methyl-ester formulation of the active ingredient. The objective was to compare the efficacy of KJM44 alone and in combination with Telar and Escort to other existing products.

Materials and Methods

The trial was located in a cloverleaf at the intersection of I – 265 (Gene Snyder Expressway) and Billtown Rd (exit 19) in Jefferson County, KY. Six herbicide treatments and an untreated check were evaluated in a randomized complete block design with 4 replications (Table 1). Plots, measuring 10' X 30', were treated at 20 GPA on December 3, 2008 using a CO₂ powered sprayer mounted on an ATV. Plots were evaluated 162 DAT (5/14/2009) to visually estimate percent control of the biennial weed complex. Data were analyzed using ARM software and treatment means were compared using Fisher's Protected LSD at $p = 0.05$.

Results

Although there was considerable variability in weed populations and in their control, all herbicide treatments resulted in some control of the biennials (Table 1). The three treatments (1-3) which included KJM44 provided control similar to each other and to the best treatment. The Milestone VM (aminopyralid) treatment resulted in less control than Milestone VM Plus (aminopyralid + triclopyr). This may be because Milestone VM has been found to be only somewhat effective on several species such as poison hemlock and buckhorn plantain. The addition of triclopyr in Milestone VM Plus increased its control of poison hemlock in the biennial complex.

Table 1. Treatments and Results for Fall Application Biennial Weed Control Trial

Trt. No.	Product Name	Rate	Rate Unit	% Poison Hemlock, Teasel, Musk Thistle Control	
				162 DAT	
1	KJM44	1.25	OZ/A	75	<i>ab</i>
	NIS	0.25	% V/V		
2	KJM44	1.25	OZ/A	74	<i>ab</i>
	Telar	0.5	OZ/A		
	NIS	0.25	% V/V		
3	KJM44	1.25	OZ/A	68	<i>ab</i>
	Escort	0.5	OZ/A		
	NIS	0.25	% V/V		
4	Milestone VM	5	FL OZ/A	44	<i>b</i>
	NIS	0.25	% V/V		
5	Milestone VM Plus	6.25	PT/A	93	<i>a</i>
	NIS	0.25	% V/V		
6	2,4-D Amine (4 LBA/GAL)	32	FL OZ/A	66	<i>ab</i>
	Telar	0.5	OZ/A		
7	Nontreated Check			3	<i>c</i>

Means within column followed by the same letter are not different according to Fisher's Protected LSD at P < 0.05.